

# Juke Networking Information

The purpose of this document is to serve as a resource for technical persons who are debugging network issues related to the Juke and the various services it provides (i.e. Airplay and Spotify). The document may also be used to explicitly state requirements and make recommendations on the optimal networking configurations to get the Juke to operate as intended on the network.

## Network Requirements

Requirement	Rationale
Router must have multicasting enabled	Juke relies on multicast traffic to communicate with other Jukes, and allow other devices to discover its services.
Router must have mDNS enabled	The service discovery protocols that Juke employs rely on mDNS. Disabling this would prevent juke.local and various sources from being discovered.
Router must not block unknown multicast addresses	Juke uses a few nonstandard multicast addresses which may be considered unknown.
Devices must be on same subnet	Juke works by using multicast traffic to advertise the availability of services and communicate with other Jukes. Because multicast traffic is usually not routed across subnets, it requires the Juke to be on the same network as the devices streaming to it.
Recommendation	Rationale
Network switches should have IGMP snooping disabled	IGMP snooping offers the benefit of optimizing which interface multicast traffic is sent, however it also opens the opportunity for multicast traffic to be filtered or blocked
The 2.4 and 5 GHz wifi should not have the same SSID	There have been issues in the past with Jukes not connecting properly to networks whose 2.4 and 5 GHz bands share the same SSID.

## Known Ports in Use

Port Number	Type	Protocol	RFC	Used by
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80	TCP	HTTP	2616	AirPlay
443	TCP	HTTPS	–	AirPlay
554	UDP / TCP	RTSP	2326	AirPlay
1900	UDP	SSDP	–	Bonjour
3689	TCP	DAAP	–	AirPlay
4999	TCP	SSH	4253	<b>Juke-</b> SSH Port
5001- 5004	TCP	–	–	<b>Juke-</b> Airplay Service Request Port
6001- 6004	TCP	–	–	<b>Juke-</b> Spotify HTTP Server Port
5297	TCP	–	–	Bonjour
5298	TCP / UDP	–	–	Bonjour
5350	UDP	NAT Port Mapping Protocol	–	Bonjour
5351	UDP	NAT Port Mapping Protocol	–	Bonjour
5353	UDP (multicast)	MDNS	3927	AirPlay / Bonjour
10000	UDP (multicast)	Multi-Juke Discovery Port (	–	<b>Juke-</b> Multi-Juke

10001	TCP	Multi-Juke Client Port	–	<b>Juke-</b> Multi-Juke
38124-38127	UDP	Client Audio Receive Port	–	<b>Juke-</b> Multi-Juke
49159	UDP (multicast)	MDNS (Windows)	–	AirPlay / Bonjour
49163	UDP (multicast)	MDNS (Windows)	–	AirPlay / Bonjour